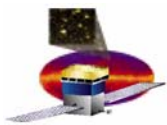


GLAST Large Area Telescope Calorimeter Subsystem

Issues and Concerns

Bill Raynor

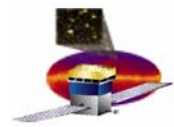




Issues and Concerns

- ❑ **ESD sensitivity of ASIC**
 - Complicates module assembly & test operations
 - Potentially unknown hidden damage
 - Stringent adherence to ESD controls must be followed
- ❑ **Schedule**
 - Availability and verification of additional EM2 TEM/TPS is essential to meeting future module deliveries
 - Pressure to deliver FMA to SLAC could result in less-than-complete characterization and analysis of FMA performance resulting in replication of problem(s) in subsequent modules
- ❑ **LATTE and CAL package not yet frozen**
 - NRL and SLAC software systems will be different for FMA
- ❑ **Functional test (and calibration) uses EM2 TEM and TPS**
 - May not reflect actual performance of the flight TEM/TPS



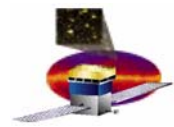


Issues and Concerns (cont.)

❑ EMI / EMC

- The LAT-SS-00778 requirements for QM and FM modules do not address testable configurations
 - Specified limits are for a CAL module alone
 - Testable configuration requires a TEM and TPS
 - EMI/EMC impact of having all of these items in test not reflected in allocation of LAT system requirements to the CAL module
- Simulation of GRID and TEM/TPS areas shielding may give inaccurate representation of LAT system shielding (too little or too much)
- Testing with EM2 TEM/TPS may not reflect actual performance of flight TEM/TPS



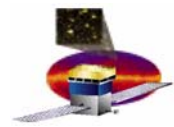


Issues and Concerns (cont.)

❑ TVAC

- **EM2 TEM/TPS has not been qualified at temperature**
 - Temperature limits imposed by EM2 design do not meet test requirements
 - Test procedure controls EM2 TEM/TPS to $+25^{\circ}\text{C} + 10^{\circ}\text{C}$
- **Potential conflict with other flight programs for test facilities**
 - Mitigated by use of one of two available chambers





Summary

- ❑ **CAL Module is ready to start environmental testing**
- ❑ **Performance**
 - **Hardware, software, procedures, support equipment and facilities have demonstrated the required performance to meet CAL Module specifications verification**
- ❑ **Risk**
 - **All known risks and limitations have been identified and are understood**
- ❑ **Procedures**
 - **All environmental test procedures are complete and ready to begin testing**

